

We Claim:

1           1. A test apparatus for testing integrated modules, comprising a carrier  
2 substrate, the carrier substrate having a plurality of connection locations are arranged  
3 thereon, the connection locations being designed such that an integrated module is  
4 connected to a test unit connected to the carrier substrate via a connection location, the  
5 connection locations forming a connection array, the connection locations being arranged  
6 in groups within the connection array;  
7           a data terminal provided for each connection location, the data terminals of  
8 connection locations of a respective group being connected to a respective different data  
9 bus;  
10          a control terminal provided for each connection location, the control terminal  
11 selecting the integrated module for a test, the control terminals of connection locations of  
12 a respective group being connected to a control bus assigned to this group; and  
13          an address and command terminal provided for each connection location, the  
14 address and command terminals of connection locations of a respective group being  
15 connected to an address and command bus via a respective switching means, which is  
16 assigned to the respective group and controlled by the control bus assigned to this group.

1           2. The test apparatus as claimed in claim 1, wherein the connection locations are  
2 arranged in rows and columns within the connection array,

3           the data terminals of connection locations of a respective column are connected to  
4   a data bus assigned to this column,  
5           the control terminals of connection locations of a respective row are connected to  
6   a control bus assigned to this row, and  
7           the address and command terminals of connection locations of a respective row  
8   are connected to a common address and command bus via a respective switching means,  
9   which may be controlled by the control bus assigned to this row.

1           3.   The test apparatus as claimed in claim 1, wherein the carrier substrate is in  
2   the form of a burn-in test board.

1           4.   A method for operating a test apparatus, the test apparatus including at least  
2   some connection locations on the carrier substrate being connected to integrated modules  
3   to be tested, the method comprising:  
4           driving corresponding control bus(es) to simultaneously operate and drive  
5   modules of a number of groups of connection locations, wherein the number is less than  
6   the number of groups present on the carrier substrate; and  
7           in simultaneously operating the modules of the number of groups, the groups  
8   being connected to the address and command bus via the respective switching means.

1           5.   The method as claimed in claim 4, wherein the connection locations are  
2   arranged in rows and columns within the connection array and the modules of a number

3 of rows are simultaneously operated and driven, the number being smaller than the  
4 number of rows present on the carrier substrate, and  
5 the modules of the number of rows which are simultaneously operated are  
6 connected to the address and command bus via the respective switching means.

1 6. The method as claimed in claim 4, wherein the modules which interchange  
2 data via the assigned data bus are operated and driven.

1 7. The method as claimed in claim 4, wherein the modules are subject to a  
2 functional test and beforehand and/or afterward to a burn-in test on the same carrier  
3 substrate.

1 8. The method as claimed in claim 7, wherein the modules are operated at a first  
2 operating frequency in the burn-in test and at a second operating frequency in the  
3 functional test, the first operating frequency being smaller than the second operating  
4 frequency.

1 9. The method as claimed in claim 7, wherein, during a burn-in test, driving the  
2 corresponding control buses simultaneously operates the modules of all groups, and  
3 the modules of the groups are connected to the address and command bus via the  
4 respective switching means.

1           10. A test apparatus for testing integrated modules, comprising a carrier  
2     substrate, the carrier substrate having a plurality of connection locations are arranged  
3     thereon, the connection locations being designed such that an integrated module is  
4     connected to a test unit connected to the carrier substrate via a connection location, the  
5     connection locations forming a connection array, the connection locations being arranged  
6     in groups within the connection array;  
7           a data terminal provided for each connection location, the data terminals of  
8     connection locations of a respective group being connected to a respective different data  
9     bus;  
10          a control terminal provided for each connection location, the control terminal  
11     selecting the integrated module for a test, the control terminals of connection locations of  
12     a respective group being connected to a control bus assigned to this group; and  
13          an address and command terminal provided for each connection location, the  
14     address and command terminals of connection locations of a respective group being  
15     connected to an address and command bus via a respective switch, which is assigned to  
16     the respective group and controlled by the control bus assigned to this group.

1           11. The test apparatus as claimed in claim 10, wherein the connection  
2     locations are arranged in rows and columns within the connection array,  
3           the data terminals of connection locations of a respective column are connected to  
4     a data bus assigned to this column,  
5           the control terminals of connection locations of a respective row are connected to  
6     a control bus assigned to this row, and

7           the address and command terminals of connection locations of a respective row  
8   are connected to a common address and command bus via a respective switch, which may  
9   be controlled by the control bus assigned to this row.

1           12. The test apparatus as claimed in claim 10, wherein the carrier substrate is in  
2   the form of a burn-in test board.

1           13. A method for operating a test apparatus, the test apparatus including at least  
2   some connection locations on the carrier substrate being connected to integrated modules  
3   to be tested, the method comprising:

4           driving corresponding control bus(es) to simultaneously operate and drive  
5   modules of a number of groups of connection locations, wherein the number is less than  
6   the number of groups present on the carrier substrate; and

7           in simultaneously operating the modules of the number of groups, the groups  
8   being connected to the address and command bus via the respective switch.

1           14. The method as claimed in claim 13, wherein the connection locations are  
2   arranged in rows and columns within the connection array and the modules of a number  
3   of rows are simultaneously operated and driven, the number being smaller than the  
4   number of rows present on the carrier substrate, and

5           the modules of the number of rows which are simultaneously operated are  
6   connected to the address and command bus via the respective switch.

1           15. The method as claimed in claim 13, wherein the modules which interchange  
2 data via the assigned data bus are operated and driven.

1           16. The method as claimed in claim 13, wherein the modules are subjected to a  
2 functional test and beforehand and/or afterward to a burn-in test on the same carrier  
3 substrate.

1           17. The method as claimed in claim 16, wherein the modules are operated at a  
2 first operating frequency in the burn-in test and at a second operating frequency in the  
3 functional test, the first operating frequency being smaller than the second operating  
4 frequency.

1           18. The method as claimed in claim 16, wherein during a burn-in test, driving the  
2 corresponding control buses simultaneously operates the modules of all groups, and  
3 the modules of the groups are connected to the address and command bus via the  
4 respective switch.